**Spectra comparison for colorimetric fiber optical sensor development in analyses of water specific chemical pollutants**

B. Obrovski1, J. Bajić2, I. Mihajlović1, M. Vojinović Miloradov1, M. Šunjević1, M. Petrović1, V. Rajs2

1University of Novi Sad, Faculty of Technical Sciences, Department of Environmental Engineering, Trg Dositeja Obradovića 6, Novi Sad, Serbia

 2University of Novi Sad, Faculty of Technical Sciences, Department of Power, Electronic and Telecommunication Engineering, Trg Dositeja Obradovića 6, Novi Sad, Serbia

In the development of colorimetric fiber optical sensor (CFOS) for measurement of water specific chemical pollutants comparative measurements of the spectra were performed by UV-Vis spectrophotometer and spectrometer with stabilized light source (SLS). The measurement of the concentrations for the analyzed parameters by UV-Vis spectrophotometer is carried out at precisely defined wavelengths. The SLS was used to measure the absorption spectra for five chemical parameters in order to determine their absorption maximum peaks. The parameters that were observed in water solution are: orthophosphates, nitrites, sulfates, chromium (VI) and total chlorine. The aim of this study was to confirm concurrence between defined wavelengths of UV-Vis spectrophotometer and wavelengths of absorption maximum peaks obtained by SLS and used for CFOS measurement of water specific parameters. The obtained results showed high agreement between measurements by UV-Vis spectrophotometer and by SLS.

**Keywords**: Absorption spectrum, sensor, spectrophotometer, wavelength, chemical parameters

**Acknowledgements**

This research is supported by the Ministry of Education and Science of the Republic of Serbia (Project No. III 43008) and City Аdministration for Еnvironmental Protection, Novi Sad (Project No. VI-501-2/2018-18в-6).